

Appl. 10/077,391

Amdt. dated 23 December 2003

Reply to Office action of 25 Sep 2003

**REMARKS**

Applicants wish to thank the Examiner for the benefit of the interview on November 20, 2003. The interview was particularly helpful in allowing the applicants' counsel to understand the Examiner's concerns, particularly with regard to Suichi et al. U.S. Patent No. 5,227,251. The amendments filed herewith provide clarity, and applicants submit, more clearly distinct the invention in view of the disclosures of the prior art.

As explained at the interview, Suichi '251 teaches the use of a "tortoise shell pattern" of "dimples" as shown in Figure 3. Suichi '251 defines "tortoise shell pattern" as "an irregular pattern substantially surrounded by a dimple." Col. 2, ll. 14-16. Suichi et al. teaches in Figure 1 the relationship between the overheating temperature of the molten metal 6 within the pouring basin 5 and "the dimple depth ( $\mu\text{m}$ ) of the tortoise shell pattern" in a continuous casting of an austenitic stainless steel thin cast plate. Col. 3, ll. 40-45. Figure 2 shows the relationship between the overheating temperature of the molten metal within the pouring basin and "the circle equivalent diameter (mm) of the tortoise shell pattern of each dimple depth ( $\mu\text{m}$ ) manufactured under the same condition as shown in Figure 1." Col. 3, ll. 50-55. Suichi et al. goes on to explain that:

"As is apparent from the drawing, there is a tendency that the higher the overheating temperature, the larger the circle equivalent diameter of the tortoise shell pattern and the smaller the dimple depth. In order to attain conditions which do not bring about the occurrence of surface cracking of the cast plate, i.e., a tortoise shell pattern having a circle equivalent diameter of 200 mm or less and a dimple depth of 5  $\mu\text{m}$  or more, [and] as can be seen from Figs. 1 and 2, it is necessary that the overheating temperature,  $\Delta T$  ( $^{\circ}\text{C}$ .), of the molten metal within the pouring basin be 15 $^{\circ}\text{C}$ . or below."

Col. 3, ll. 55-66.

As explained at the interview, the "discrete projections" called for by the claims of the presently claimed subject matter are not "dimples." This is evident from a comparison of the ordinary and customary definitions of "dimple" and "projection." Dimple is defined in the dictionary, in the present context, as "2: a depression or indentation on any surface...such a depression in a building material (as for the recessing of nailheads)." See Webster's Third International Dictionary (Unabridged) at 634-635 (3<sup>rd</sup> Edition 1993). By contrast, "projection" is defined, in the present context, as "6a (1): a jutting out or causing to jut out (2): a part that projects or juts out: an extension beyond something else (~ of earth

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above its natural level..." Webster's Third International Dictionary (Unabridged) at 1813 (3<sup>rd</sup> Edition 1993).

Applicants respectfully submit that these dictionary definitions make certain that "a dimple" cannot be considered to be a "projection." Applicants have also amended the claims to use the word "distribution" in place of the word "pattern" to make clear that the projections, as shown in Figure 6, are distributed without regard to any regular or irregular pattern. Here applicants are using the word "distribution" in an ordinary dictionary meaning (2a) "as a spreading out or scattering over an area" (namely the surface of the casting roll) the projections in a random way, i.e., lacking a pattern. *See*, Webster's Third International Dictionary (Unabridged) at 660 (3<sup>rd</sup> Edition 1993). In this regard, applicants have used the word "distribution" instead of the word "pattern" to avoid the misunderstanding, suggested by the Office Action, that comes from the juxtaposition of "random" and "pattern" (which are reality opposites).

Also as explained at the interview, the Office Action suggests a misunderstanding of applicants' position with regard to the cited references. Applicants do not dispute the combining of the teachings of Strezov et al. '948 (which grows out of the same project as the presently claimed subject matter) with Suichi '251 for purposes of a rejection. What Applicants do dispute is that the combination of the disclosures of Strezov et al. and Suichi et al. suggests the claimed subject matter of the present invention. Strezov et al. teaches that the casting roll surfaces must be textured with a regular defined pattern of V-shaped grooves and ridges, and the substitution of the "tortoise shell pattern" of Suchi et al. fails totally in disclosing the present claimed invention for the reasons described in detail above.

Claim 11 has also been amended to make clear that JP '751 is wide of the mark. JP '751 discloses the use of shot blasting or electroplating and then covering that with a protective coating, such as nickel or chromium, **for the purpose of "having a smooth surface."** The purpose of shot blasting of the substrate in JP '751 is to provide adhesion between the substrate and the protective coating which presents a smooth outer surface. Indeed JP '751 specifically teaches that "**the outer surface of the outer layer 13 is finished smoothly, and the degree of smoothness is preferably for example, the same as the level of smoothness of a normal cold-rolling roll.**" JP '751 at 5, ll. 8-10 (emphasis added).

Irie et al. '084 and JP '547 are remote prior art. Irie et al. is directed to hot-rolling of steel to produce non-aging cold-rolled steel sheets having an excellent formability

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of a specific composition. There is no disclosure or suggestion of thin roll casting. Nor is there any disclosure or suggestion of the textured surfaces for any purpose, let alone for use on casting roll surfaces as described in the presently claimed subject matter. Apparently Irie et al. is only cited because of the speed in the range 75 meters per min as described in claim 7, but that is in a wholly different context far from the presently claimed subject matter, and does not fill any of the deficiencies in the disclosure of Strezov et al. and Suichi et al.

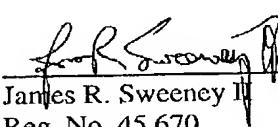
Similarly, JP '547 appears to be only cited because of claims 20 and 21. Here applicant respectfully notes that the disclosure of JP '547 is to an innermold of continuous slab casting machine formed of cobalt-copper-molybdenum alloy layer, and does not disclose or suggest the use of a nickel-chromium-molybdenum alloy for a different application as in the presently claimed invention.

Applicants respectfully submit that with the present amendments to claims 1 to 21 that the claims are put into condition for allowance, and should be allowed. It is respectfully requested that this paper be considered as a Petition for an Extension of Time sufficient to effect a timely response if necessary and that any shortages in other fees be charged, or any overpayment in fees be credited, to the Account of Barnes & Thornburg, Deposit Account No. 10-0435 with reference to file 29385-69914. The Examiner is encouraged to call the undersigned to discuss this case. If the Examiner has any further questions or concerns, applicant respectfully requests that the Examiner telephone applicants' counsel, Arland T. Stein, Esq., at (317) 231-7390.

Respectfully,

BARNES & THORNBURG.

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